REMARKS

Claims 1-24 are pending in the present application. Claims 1, 7, and 18 are written in independent form.

I.   Claim Objection:

Applicant has editorially amended the preamble of claim 1 to recite the term "A method," as suggested by the Examiner.

II.   Claim Rejection Under 35 U.S.C. §112(2nd):

The Examiner rejects claims 4-6 and 12-17 under 35 U.S.C. §112(2nd) because claims 4 and 12 recite the objectionable term "formulaically." To address the Examiner's concerns, Applicant amends claims 4 and 12 by deleting the objectionable term in favor of reciting that the back-off delay is determined "using a formula." Applicant respectfully notes that the two terms are synonymous, and therefore the amendments to claims 4 and 12 are not narrowing.

The amended claims are believed to more particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming the raised rejection under §112(2nd).

III.   Allowable Subject Matter:

Numbered paragraph 2 of the Office Action indicates that claims 5, 6, 15-17, and 21-23 would be allowed if they were rewritten in independent form. Applicant has not, however, rewritten any of the claims (as suggested) since independent claims 1, 7, and 18 are believed to be patentable for the reasons discussed in detail below.

IV.   Exemplary Embodiments of the Present Invention:

Several features associated with an exemplary, non-limiting embodiment of the present invention will be appreciated with reference to

Fig. 2. For example, consider the logic loop defined by steps 24-28 and 33-36. Assume that a data packet has been transmitted unsuccessfully five times. At this point (step 24), (i) = 5 and the back-off delay window W(5) = 8, as shown for example in Table 1.[1] If the data packet again experiences a collision (step 28), then a new back-off delay window W(6) is obtained (steps 33, 34, and 36). As shown in Table 1, and by way of example only, the new back-off delay window W(6) = the previous back-off delay window W(5) = 8. That is, the back-off delay window W(6) is less than two times the previous back-off delay window W(5). In this way, a series of unsuccessful transmissions do not cause the back-off delay window to grow exponentially (as is the case in conventional techniques).

Also consider the logic loop defined by steps 24-28 and 29-32. Continuing with the hypothetical scenario discussed above, assume that the sixth transmission of the data packet is successful (step 28). Here, the state index value (i) is decreased by 2 (step 29), for example, from 6 to 4. The back-off delay window W(4) is then calculated (steps 30-32). As shown in Table 1, the back-off delay window W(4) = 4, which is greater than the smallest back-off delay window W(1) of 2.

V.   Claim Rejections on Prior Art Grounds:

The Examiner rejects claims 1, 4, 7, 8, 12-14, and 18-20 under 35 U.S.C. §103(a) as being obvious over US 6,285,662 to Watanabe et al. ("Watanabe") in view of the US 6,614,799 to Gummalla et al. ("Gummalla"); and rejects claims 2, 3, 9-11, and 24 under 35 U.S.C. §103(a) as being obvious over Watanabe and Gummalla, and further in view of US 6,172,983 to Shaffer ("Shaffer"). Applicant respectfully traverses all of these rejections in view of the following remarks. Each of the independent claims is discussed separately below.

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[1] Spec., p. 10.

A.   Independent Claim 1:

The rejection grounds recognize that Watanabe is not pertinent to obtaining a back-off delay window that is "less than two times a preceding back-off delay window," and therefore looks to Gummalla to allegedly teach this feature. Applicant respectfully disagrees.

It is well settled that the Examiner bears the initial burden of factually supporting a prima facie case of obviousness. Such factual support includes pointing out the suggestion or motivation to combine the reference teachings. The suggestion may be found in the references themselves or in the knowledge generally available to the skilled artisan. In the situation at hand, however, the rejection grounds have not carried the initial burden, and therefore Applicant is not obligated to submit evidence of nonobviousness.

Specifically, the rejection grounds summarily conclude that those skilled in the art would have been motivated to combine the references "to reduce delay in network transmission." The Examiner apparently believes that Gummalla's back-off window adjustment technique would somehow reduced delay that would otherwise be experienced using Watanabe's back-off window adjustment technique. However, the rejection grounds have not provided any indication as to where this teaching can be found in the prior art, or demonstrated that the teaching is generally available to the skilled artisan. At least in this respect, the rejection grounds are incomplete.

Furthermore, Gummalla does not teach the feature upon which the Examiner relies to reject claim 1. The cited portion of Gummalla teaches nothing more than the conventional exponential back-off algorithm discussed in the background section of the present application. Specifically, Gummalla indicates that the back-off window is controlled via an "exponential" back-off algorithm, in which the back-off window parameters are expressed as "a power of two."[2] According to this algorithm, the

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[2] Gummalla (6:56-64).

exponent value is incremented by one each time a collision is detected.[3] Thus, each detected collision necessarily causes the size of the back-off window to double. Certainly then, Gummalla does not teach or suggest obtaining a back-off delay window that is "less than two times a preceding back-off delay window," as required by claim 1.

B.   Independent Claim 7:

The rejection grounds recognize that Watanabe is not pertinent to obtaining a back-off delay window that is "equal to a preceding or future back-off delay window," and therefore looks to Gummalla to allegedly teach this feature. Applicant respectfully disagrees.

For reasons analogous to those noted above with respect to claim 1, Applicant respectfully submits that the rejection grounds have not carried the initial burden of factually supporting a prima facie case of obviousness. Namely, the Examiner apparently believes that Gummalla's back-off window adjustment technique would somehow reduced delay that would otherwise be experienced using Watanabe's back-off window adjustment technique. However, the rejection grounds have not provided any indication as to where this teaching can be found in the prior art, or demonstrated that the teaching is generally available to the skilled artisan.

Furthermore, Gummalla does not teach the feature upon which the Examiner relies to reject claim 7. This is because, as noted above with respect to claim 1, Gummalla teaches nothing more than the conventional exponential back-off algorithm discussed in the background section of the present application. Thus, each detected collision necessarily causes the size of the back-off window to double. Certainly then, Gummalla does not teach or suggest obtaining a back-off delay window that is "equal to a preceding or future back-off delay window," as required by claim 7.

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[3] Gummalla (11:39-43).

C.   Independent Claim 18:

The rejection grounds recognize that Watanabe is not pertinent to obtaining a back-off delay window (for transmitting a next data packet) that is "greater than a smallest back-off delay window," and therefore looks to Gummalla to allegedly teach this feature. Applicant respectfully disagrees.

For reasons analogous to those noted above with respect to claim 1, Applicant respectfully submits that the rejection grounds have not carried the initial burden of factually supporting a *prima facie* case of obviousness. Namely, the Examiner apparently believes that Gummalla's back-off window adjustment technique would somehow outperform Watanabe's back-off window adjustment technique. However, the rejection grounds have not provided any indication as to where this teaching can be found in the prior art, or demonstrated that the teaching is generally available to the skilled artisan.

Further, Applicant respectfully notes that Watanabe's back-off window adjustment technique already considers network traffic via consideration of the "collision condition."[4] Simply put, those skilled in the art would not have been motivated to modify a reference (i.e., Watanabe) to achieve a feature (i.e., consideration of network traffic) that is already present in the reference. Doing so would achieve no additional functionality or advantage.

Furthermore, Gummalla does not teach the feature upon which the Examiner relies to reject claim 18. In particular, Gummalla indicates that the back-off start BS value (for a transmission) may be increased or decreased. However, the increase or decrease is based on an evaluation of the total number of collisions and successful transmission on a particular channel. Indeed, if the total number of collisions and successful transmission on a particular channel remain the same from one transmission to the next, then the back-off start BS value would remain the

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[4] Watanabe (3:34-65).

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same. This is in contrast to claim 18 in which the decrease in the block-off delay window occurs when a data packet has been transmitted without contention.

CONCLUSION

For these reasons, Applicant respectfully submits that claims 1, 7, and 18 are patentable, and that claims 2-6, 8-17, and 19-24 are patentable at least by virtue of their dependencies. Accordingly, an early indication of the allowability of all of the pending claims is earnestly solicited.
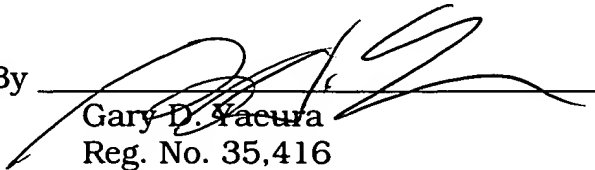
In the event that any matters remain at issue in the application, the Examiner is invited to contact the undersigned at (703) 668-8000 in the Northern Virginia area, for the purpose of a telephonic interview.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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